SOME INEQUALITIES FOR THE MULTIPLICATIVE
SUM ZAGREB INDEX OF GRAPH OPERATIONS

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Abstract. The multiplicative sum Zagreb index is defined for a simple graph G as the product of the terms $d_G(u) + d_G(v)$ over all edges $uv \in E(G)$, where $d_G(u)$ denotes the degree of the vertex u of G. In this paper, we present some lower bounds for the multiplicative sum Zagreb index of several graph operations such as union, join, corona product, composition, direct product, Cartesian product and strong product in terms of the multiplicative sum Zagreb index and the multiplicative Zagreb indices of their components.

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